CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
SAN FRANCISCO BAY REGION

ORDER No. 89-006

NPDES No. CA0029491

WASTE DISCHARGE REQUIREMENTS FOR:

SIGNETICS CORPORATION
100 SAN LUCAR COURT FACILITY
SUNNYVALE, SANTA CLARA COUNTY

The California Regional Water Quality Control Board, San Francisco Bay Region, (hereinafter called the Board) finds that:

1. Signetics Corporation, hereinafter called the discharger, by application dated October, 13, 1988 has applied for issuance of waste discharge requirements and a permit to discharge wastes under the National Pollutant Discharge Elimination System (NPDES).

2. The discharger has operated an equipment maintenance facility located at 100 San Lucar Court, Sunnyvale, Santa Clara County from 1973 to present.

3. Site investigations have disclosed the presence of organic pollutants in soil and groundwater. Solvent materials detected in the groundwater include 1,1,1-trichloroethane (TCA) and trichloroethylene (TCE) at concentrations as high as 1900 parts per billion. The discharger has investigated the lateral and vertical extent of the contamination and is proceeding with a cleanup operation.

4. The discharger proposes to contain and cleanup the pollutant plume by extracting groundwater from onsite wells, pumping to an air stripping plant located onsite and then discharging the treated water, which will not exceed a maximum flow of 15,000 gallons a day, to a storm drain tributary to Calabazas Creek and South San Francisco Bay.

5. The Regional Board adopted a revised Water Quality Control Plan for the San Francisco Bay Region (Basin Plan) on December 17, 1986. The Basin Plan contains water quality objectives for South San Francisco Bay, and contiguous surface and groundwater.

6. The beneficial uses of Calabazas Creek and South San Francisco Bay include:

   - o Contact and non-contact water recreation
   - o Estuarine habitat
   - o Fish spawning andmigration
   - o Industrial service supply
   - o Navigation
   - o Ocean commercial and sport fishing
   - o Preservation of rare and endangered species
   - o Wildlife habit
   - o Shellfishing
   - o Warm fresh water and cold fresh water habitat

7. The Basin Plan prohibits discharge of wastewater which has "particular characteristics of concern to beneficial uses" (a) "at any point in San Francisco Bay south of the Dumbarton Bridge" and (b) "at any point where the wastewater does not receive a minimum initial dilution of at least 10:1 or into any nontidal water, deadend slough, similar confined water, or any immediate tributary thereof."

8. The Basin Plan allows for exceptions to the prohibitions referred to in Finding 7 above when it can be demonstrated that a net environmental benefit can be derived as a result of the discharge.

9. Exceptions to the prohibitions referred to in Finding 7 are warranted because the discharge is an integral part of a program to clean up polluted groundwater and thereby produce an environmental benefit, and because receiving water concentrations are expected to be below levels that would effect beneficial uses. Should studies indicate chronic effects, not currently anticipated, the Board will review the requirements of this Order based upon section B.1.e.

10. The Basin Plan prohibits discharge of "all conservative toxic and deleterious substances, above those levels which can be achieved by a program acceptable to the Board, to waters of the Basin." The discharger's groundwater extraction and treatment system and associated operation, maintenance, and monitoring plan constitutes an acceptable control program for minimizing the discharge of toxicants to waters of the State.

11. Effluent limitations of this Order are based on the Basin Plan, State and U.S. Environmental Protection Agency (EPA) plans and policies, and best engineering judgment as to best available technology economically achievable. EPA Region IX draft guidance "NPDES Permit Limitations for Discharge of Contaminated Groundwater: Guidance Document" was also considered in the determination of effluent limits.

12. The issuance of waste discharge requirements for this discharge is exempt from the provisions of Chapter 3 (commencing with Section 21100) of Division 13 of the Public Resources Code (CEQA) pursuant to Section 13389 of the California Water Code.

13. The Board has notified the discharger and interested agencies and persons of its intent to issue waste discharge requirements for the discharge and has provided them with an opportunity for a public hearing and an opportunity to submit their written views and recommendations.

14. The Board, in a public meeting, heard and considered all comments pertaining to the discharge.

IT IS HEREBY ORDERED that the discharger, in order to meet the provisions contained in Division 7 of the California Water Code and regulations adopted thereunder, and the provisions of the Clean Water Act and regulations and guidelines adopted thereunder, shall comply with the following:

A. Effluent Limitations

1. The discharged waste shall not contain constituents in excess of the following limits:

Constituent	Units	Instantaneous Maximum
Trichloroethylene	mg/L	0.005
1,1,1-Trichloroethane	mg/L	0.005
1,1-Dichloroethane	mg/L	0.005
1,2-Dichloroethylene	mg/L	0.005
1,1-Dichloroethylene	mg/L	0.005
1,2-Dichlorobenzene	mg/L	0.005
Tetrachloroethylene	mg/L	0.004
Total concentration of all voloatile organic chemicals (VOCs)	mg/L	0.100

2. The pH of the discharge shall not exceed 8.5 nor be less than 6.5.

3. In any representative set of samples, the discharge of waste shall meet the following limit of quality:

TOXICITY: The survival of rainbow trout fishes in 96 hour bioassays of the effluent as discharged shall be a median of 90% survival and a 90 percentile value of not less than 70% survival.

B. Receiving Water Limitations

1. The discharge of waste shall not cause the following conditions to exist in waters of the State at any place:

   a. Floating, suspended, or deposited macroscopic particulate matter or foam;

   b. Bottom deposits or aquatic growths;

   c. Alteration of temperature, turbidity, or apparent color beyond present natural background levels;

   d. Visible, floating, suspended, or deposited oil or other products of petroleum origin;

   e. Toxic or other deleterious substances to be present in concentrations or quantities which will cause deleterious effects on aquatic biota, wildlife, or waterfowl, or which render any of these unfit for human consumption either at levels created in the receiving waters or as a result of biological concentration.

2. The discharge of waste shall not cause the following limits to be exceeded in waters of the State in any place within one foot of the water surface:

   a. Dissolved oxygen: 5.0 mg/l minimum. The median dissolved oxygen concentration for any three consecutive months shall not be less than 80% of the dissolved oxygen content at saturation. When natural factors cause lesser concentration(s) than specified above, the discharge shall not cause further reduction in the concentration of dissolved oxygen.

   b. pH: The pH shall not be depressed below 6.5 nor raised above 8.5, nor caused to vary from normal ambient pH levels by more than 0.5 units.

   c. Un-ionized ammonia (as N) 0.025 mg/L annual mean.
   0.4 mg/L maximum at any time.

3. The discharge shall not cause a violation of any applicable water quality standard for receiving waters adopted by the Board or the State Water Resources Control Board, as required by the Federal Water Pollution Control Act and regulations adopted thereunder. If more stringent applicable water quality standards are promulgated or approved pursuant to Section 303 of the Federal Water Pollution Control Act or amendments thereto, the Board will revise and modify this order in accordance with such more stringent standards.

C. Provisions

1. The discharger shall comply with all sections of this order immediately upon adoption by the Board.

2. The discharger shall comply with the self-monitoring program as adopted by the Board and as may be amended by the Executive Officer.

3. The discharger shall also notify the Regional Board if any activity has occurred or will occur which would result in the discharge, on a frequent or routine basis, of any toxic pollutant which is not limited by this Order.

4. The discharger shall comply with all items of the attached "Standard Provisions, Reporting Requirements and Definitions" dated December 1986, except items A.10, B.2, B.3, C.8, and C.11.

5. This Order expires January 18, 1994. The discharger must file a report of waste discharge in accordance with Title 23, Chapter 3, Subchapter 9 of the California Administrative Code not later than 180 days in advance of such expiration date as application for issuance of new waste discharge requirements.

6. This Order shall serve as a National Pollutant Discharge Elimination System Permit pursuant to Section 402 of the Clean Water Act or amendments thereto, and shall become effective 10 days after date of its adoption provided the Regional Administrator, Environmental Protection Agency, has no objection. If the Regional Administrator objects to its issuance, the permit shall not become effective until such objection is withdrawn.

I, Steven R. Ritchie, Executive Officer, do hereby certify the foregoing is a full, true and correct copy of an order adopted by the California Regional Water Quality Control Board, San Francisco Bay Region on January 18, 1989.

Steven R. Ritchie,
EXECUTIVE OFFICER

Attachments:

Standard Provisions & Reporting Requirements, dated December 1986 and amended January 1987.
Self-Monitoring Program.
Site map.

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
SAN FRANCISCO BAY REGION

T E N T A T I V E

SELF-MONITORING PROGRAM

FOR

SIGNETICS CORPORATION

100 SAN LUCAR COURT FACILITY

SUNNYVALE, SANTA CLARA COUNTY

NPDES No. CA0029491

ORDER No. 89-006

CONSISTS OF

PART A, dated December 1986 and modified January 1987, including Appendices A through E

PART B, Adopted: January 18, 1989.

PART B

I. DESCRIPTION OF SAMPLING STATIONS

A. INFLUENT

Station	Description
I-1	At a point in the groundwater extraction/treatment system immediately prior to treatment.

B. EFFLUENT

Station	Description
E-1	At a point in the groundwater extraction/ treatment system immediately following treatment and prior to discharging to the storm drain.

C. RECEIVING WATERS

Station	Description
C-1	At a point in Calabazas Creek at least 100 feet but no more than 200 feet down-stream from the storm sewer discharge point.

II. SCHEDULE OF SAMPLING AND ANALYSIS

The schedule of sampling and analysis shall be that given in the attached Table I.

III. MODIFICATION OF PART A, DATED JANUARY 1987

All items of Self-Monitoring Program Part A, dated December 1986 and as modified January 1987 shall be complied with except for the following:

A. Additions to Part A: Section G.4.d.5: "In annual open-scan for influent and effluent samples, all chromatic peaks for purgeable halocarbons and/or volatile organics shall be identified and quantified. If previously unquantified peaks are identified in any sample, these peaks shall be confirmed within four weeks or at the next sampling event based on analyses of samples using chemical standards necessary to achieve proper identification and quantification.

"Results from each required analysis and observation, including any conformatory analysis, shall be submitted as laboratory originated data summary sheets in the quarterly self-monitoring reports. Results shall also be submitted for any additional analyses performed by the discharger at the specific request of the Board for parameters for which effluent limits have been established and provided to the discharger by the Board, and shall be submitted with the report for the quarter in which the analysis was made."

B. Deletions from part A: Sections D.2.b., D.2.g., D.3.b., E.1.e.1., E.1.f., E.2.b., E.3., E.4., E.5., F.2.b., G.2., G.4.b., G.4.e., G.4.f.

C. Modifications to part A: for the following, the discharger shall comply with the Sections as changed and reported herein.

1. Section D.2.a. is changed to read:

   Samples of effluent and receiving waters shall be collected at times coincident with influent sampling unless otherwise stipulated. The Regional Board or Executive Officer may approve an alternative sampling plan if it is demonstrated that expected operating conditions warrant a deviation from the standard sampling plan.

2. Section D.2.d. is changed to read:

   If two consecutive samples of any one constituent or parameter monitored on a weekly or monthly basis in a 30-day period exceed the effluent limit or are otherwise out of compliance, or if the required sampling frequency is once per month or less (quarterly, annually or other) and the sample or parameter exceeds the limit or is otherwise out of compliance, the discharger shall implement procedure(s) acceptable to or approved by the Board Executive Officer, on a case by case basis.

3. Section D.2.e. is changed to read:

   If any instanteneous maximum limit is exceeded, the discharge shall terminate immediately upon discovery of the excess, and shall not resume until the cause of the violation is found and corrected and/or the Board's Executive Officer authorizes resumption of the discharge.

4. In Section F.1, the phrase "(at the waste treatment plant)" is changed to read, "(at the discharger's facility at 100 San Lucar Court in Sunnyvale)."

5. Written reports under G.4 shall be filed each calender quarter, once in January, April, July, and October.

6. Information requested in Section G.4.e. shall be prepared in a format similar to NPDES Discharge Monitoring Report, EPA Form 3320-1, and submitted only to the Regional Board Executive Officer and not to the EPA.

7. The annual report required in Section G.5. shall be submitted in place of the quarterlyreport to the Regional Board by January 31 of each year covering the previous calendar year.

IV. Miscellaneous Reporting

If any chemicals or additives are proposed to be used in the operation and/or maintenance of the groundwater extraction/treatment system, the discharger shall obtain the Executive Officer's concurrence prior to use. The details concerning such approved use shall be reported in the next periodic report submitted to the Board.

I, Steven R. Ritchie, Executive Officer, hereby certify that the foregoing Self-Monitoring Program:

1. Has been developed in accordance with the procedure set forth in this Regional Board's Resolution No. 73-16 in order to obtain data and document compliance with waste discharge requirements established in Regional Board Order No. 89-006.

2. Was adopted by the Board on January 18, 1989.

3. May be reviewed at any time subsequent to the effective date upon written notice from the Executive Officer or request from the discharger and revisions will be ordered by the Executive Officer or Regional Board.

Steven R. Ritchie,
EXECUTIVE OFFICER

Attachment: Table 1

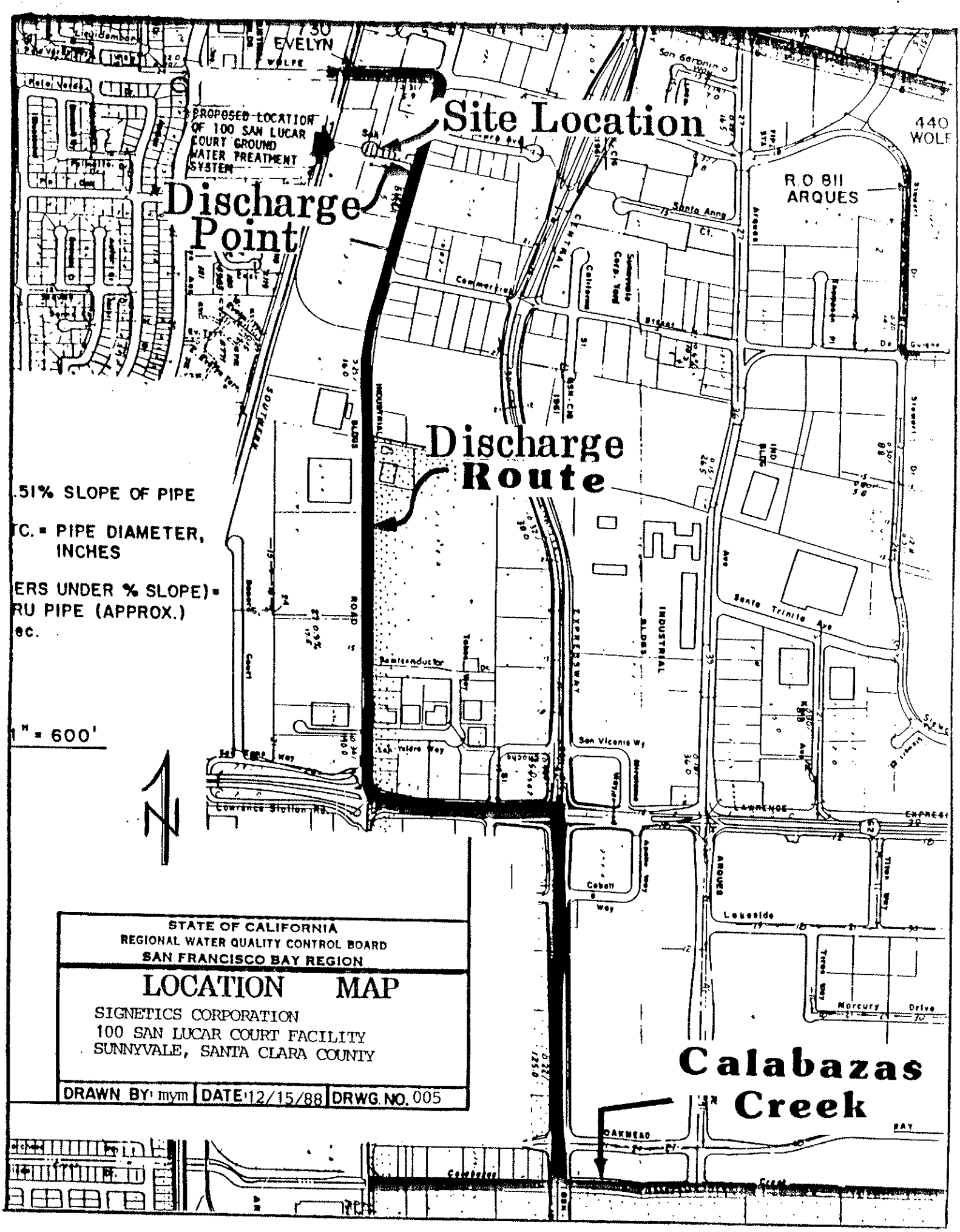
T A B L E 1

SCHEDULE FOR SAMPLING, MEASUREMENTS, AND ANALYSIS

Sampling Station >>>>>	I-1		E-1		C-1	
Type of Sample	G		G		G	
Flow Rate (Gal/Day)			D			
BOD, 5-day, 20 C, or COD (mg/1)			Y			
pH (units)			M		2/Y	
Dissolved Oxygen (mg/L and % Saturation)					2/Y	
Temperature (deg. C)					2/Y	
Ammonia Nitrogen (mg/L & kg/day)			V			
Fish Tox'y 96-hr. TL % Surv'l in undiluted waste			Y			
GC/MS Open Scan (EPA Method 624/625) (mg/L)	Y		Y			
Identifiable (1) Organic Chemicals (mg/L)	M		M		2/Y	
Metals (Std. Methods for Priority Pollutants)			Y			

LEGEND FOR TABLE

G = Grab Sample
D = Once each day
M = Once each month
Q = Quarterly, once in March, June, September, and December
2/Y = Once in March and once in September
Y = Once a year
(1) Defined as chemicals obtained by using EPA method 601
V = Varies; total ammonia nitrogen shall be analyzed and un-ionized ammonia calculated whenever fish bioassay test results fail to meet the specified percent survival.



STATE OF CALIFORNIA
REGIONAL WATER QUALITY CONTROL BOARD
SAN FRANCISCO BAY REGION

LOCATION MAP

SIGNETICS CORPORATION
100 SAN LUCAR COURT FACILITY
SUNNYVALE, SANTA CLARA COUNTY

DRAWN BY: mym	DATE: 12/15/88	DRWG. NO. 005